

REMARKS

In the Office Action, mailed January 4, 2007, the Office Action rejected claims 1-4, 8-11 and 15-18 under 35 U.S.C. § 103. Claims 5, 12 and 15 have been amended. Applicants respectfully respond to this Office Action.

I. Rejection of Claims 1-4, 8-11 and 15-18 Under 35 U.S.C. § 103

The Office Action rejected claims 1-4, 8-11 and 15-18 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,577,630 to Markwalter (hereinafter, "Markwalter") in view of U.S. Patent No. 5,826,172 to Ito (hereinafter, "Ito"). This rejection is respectfully traversed.

The M.P.E.P. states that

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.

The initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done. To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

M.P.E.P. § 2142.

Applicants respectfully submit that the claims at issue are patentably distinct from the cited references. The cited references do not teach or suggest all of the limitations in these claims.

Claim 1 recites "power boosting transmissions of a second number of installments of the first subpacket of data." Markwalter, alone or in combination with Ito, does not teach, suggest or disclose this claim element.

The Office Action admits that “Markwalter does not clearly teach on the power boosting transmission of a second number of installments of the first subpacket of data.” See Office Action, page 2. The addition of Ito does not overcome the deficiencies of Markwalter. In fact, there is no teaching, suggestion or disclosure of “power boosting transmissions” in any portion of Ito. Rather, Ito states:

[T]he transmitting side should have a means which forms n subframes within a frame when the number of transmissions is n. The means which forms n subframes should include a means which inserts a new paging signal in a subframe positioned at one end of said frame, and which inserts a paging signal that is to be transmitted for the second or subsequent time in a subframe arranged at a position corresponding to the number of times in question. Also, a means which changes the number and length of subframes within a frame when the setting means changes the number of transmissions n.

Ito, col. 4, lines 18-27.

A means which forms n subframes within a frame when the number of transmissions is n does not teach, suggest or disclose “power boosting transmissions of a second number of installments of the first subpacket of data.” A means which inserts a new paging signal or a paging signal also does not teach, suggest or disclose “power boosting transmissions of a second number of installments.” Similarly, a means which changes the number and length of subframes within a frame does not teach, suggest or disclose “power boosting transmissions.” In fact, there is no teaching, suggestion or disclosure of any kind in the above cited passage of Ito of “power boosting transmissions of a second number of installments of the first subpacket of data.”

The Office Action also points to Figure 2 of Ito (and the corresponding description) as teaching “power boosting transmissions of a second number of installments of the first subpacket of data.” Figure 2 of Ito illustrates “[t]he operation of transmitting paging signals to a receiving terminal.” Ito, col. 5, lines 35-36. However, the description corresponding to Figure 2 does not teach, suggest or disclose “power boosting transmissions.” For example, Ito states:

In frame i transmitted at time t0, the synchronization signal is followed by transmission of a control signal indicating that the number of transmissions is 2, and then by transmission of paging signal a for the second time, paging signal b for the first time, and paging signal c for the first time.

Ito, col. 5, lines 39-44

Transmitting the synchronization signal, followed by transmission of a control signal does not teach, suggest or disclose “power boosting transmissions” of such signals. Similarly, Ito does not teach, suggest or disclose “power boosting transmissions” of paging signal a, paging signal b, and paging signal c. Ito merely discloses that such signals are transmitted. There is no teaching, suggestion or disclosure of “power boosting transmissions.”

In addition, Ito states:

Accordingly, at time $t_0 + T$, which is the next transmission time, the synchronization signal is followed by transmission of a control signal indicating that the number of transmissions is 3, and then by transmission of paging signal a for the third time, paging signal b for the second time, and paging signal c for the second time.

As previously stated above, transmitting the synchronization signal, followed by transmission of a control signal does not teach, suggest or disclose “power boosting transmissions” of such signals. Similarly, Ito does not teach, suggest or disclose “power boosting transmissions” of paging signal a, paging signal b, and paging signal c. Ito merely discloses that such signals are transmitted. There is no teaching, suggestion or disclosure of “power boosting transmissions.”

Further, Ito states:

[W]hen the number of transmissions has been set in a control signal, a comparison is made, for each paging signal transmitted the previous time, of the number of times said paging signal has been transmitted and the number of transmissions that have been set.

Ito, col. 5, lines 57-62.

Comparing the number of times the paging signal has been transmitted and the number of transmissions that have been set does not teach, suggest or disclose “power boosting transmissions.” In fact, the comparison is made so that “[w]hen the number of times a paging signal has been transmitted is equal to or greater than the number of transmissions that have been set, retransmission of that paging signal is stopped.” Ito, col. 5, lines 62-65.

In view of the foregoing, Applicants respectfully submit that claim 1 is patentably distinct from the cited references. Accordingly, Applicants respectfully request that the rejection of claim 1 be withdrawn.

The Office Action rejected claims 2-4 and 6-7 under 35 U.S.C. § 103(a) based on Markwalter in view of Ito. This rejection is respectfully traversed. It is well settled that if an

independent claim is patentable over the cited art, then all claims depending from the independent claim are similarly patentable. M.P.E.P. § 2143.03 (“If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious”). In this case claims 2-4 and 6-7 depend either directly or indirectly from claim 1. As noted above, claim 1 is patentable and nonobvious over the combination of Markwalter and Ito. Accordingly, as the independent claim is patentable over these references, dependent claims 2-4 and 6-7 (which depend from independent claim 1) are similarly allowable. Favorable consideration and withdrawal of this rejection is respectfully requested.

Claim 8 is rejected along the same rationale as claim 1. As such, Applicants respectfully submit that claim 8 is patentably distinct from the cited references. Accordingly, Applicants respectfully request that the rejection of claim 8 be withdrawn because Markwalter and Ito, alone or in combination, do not teach, suggest or disclose each and every claim element of claim 8.

Claims 9-11 depend either directly or indirectly from claim 8. Accordingly, Applicants respectfully request that the rejection of claims 9-11 be withdrawn for the same reasons as those presented in connection with claim 8 because Markwalter and Ito, alone or in combination, do not teach, suggest or disclose all of the claim elements of claim 8.

Claim 15 has been amended to correct a typographical error. No new matter has been added to claim 15, Claim 15 recites “a power boost unit adapted to apply a power boost factor to a portion of the subpacket.” Markwalter, alone or in combination with Ito, does not teach, suggest or disclose this claim element.

The Office Action admits that “Markwalter does not clearly teach on a power boost unit adapted to apply a power boost factor to a portion of the subpackets.” See Office Action, page 4. The addition of Ito does not overcome the deficiencies of Markwalter. In fact, there is no teaching, suggestion or disclosure of “a power boost unit” in any portion of Ito. Rather, Ito states:

[T]he transmitting side should have a means which forms n subframes within a frame when the number of transmissions is n. The means which forms n subframes should include a means which inserts a new paging signal in a subframe positioned at one end of said frame, and which inserts a paging signal that is to be transmitted for the second or subsequent time in a subframe arranged at a position corresponding to the number of times in question. Also, a means which changes the number and length of

subframes within a frame when the setting means changes the number of transmissions n.

Ito, col. 4, lines 18-27.

A means which forms n subframes within a frame when the number of transmissions is n does not teach, suggest or disclose “a power boost unit adapted to apply a power boost factor to a portion of the subpackets.” A means which inserts a new paging signal or a paging signal also does not teach, suggest or disclose “a power boost unit adapted to apply a power boost factor to a portion of the subpackets.” Similarly, a means which changes the number and length of subframes within a frame does not teach, suggest or disclose “a power boost unit.” In fact, there is no teaching, suggestion or disclosure of any kind in the above cited passage of Ito of “a power boost unit adapted to apply a power boost factor to a portion of the subpackets.”

The Office Action also points to Figure 2 of Ito (and the corresponding description) as teaching “a power boost unit adapted to apply a power boost factor to a portion of the subpackets.” Figure 2 of Ito illustrates “[t]he operation of transmitting paging signals to a receiving terminal.” Ito, col. 5, lines 35-36. However, the description corresponding to Figure 2 does not teach, suggest or disclose “a power boost unit adapted to apply a power boost factor to a portion of the subpackets.” For example, Ito states:

In frame i transmitted at time t0, the synchronization signal is followed by transmission of a control signal indicating that the number of transmissions is 2, and then by transmission of paging signal a for the second time, paging signal b for the first time, and paging signal c for the first time.

Ito, col. 5, lines 39-44

Transmitting the synchronization signal, followed by transmission of a control signal does not teach, suggest or disclose “a power boost unit adapted to apply a power boost factor to a portion of the subpackets.” Similarly, Ito does not teach, suggest or disclose “a power boost unit adapted to apply a power boost factor” to paging signal a, paging signal b, and paging signal c. Ito merely discloses that such signals are transmitted. There is no teaching, suggestion or disclosure of “a power boost unit adapted to apply a power boost factor to a portion of the subpackets.”

In addition, Ito states:

Accordingly, at time $t_0 + T$, which is the next transmission time, the synchronization signal is followed by transmission of a control signal indicating that the number of transmissions is 3, and then by transmission of paging signal a for the third time, paging signal b for the second time, and paging signal c for the second time.

As previously stated above, transmitting the synchronization signal, followed by transmission of a control signal does not teach, suggest or disclose “a power boost unit adapted to apply a power boost factor to a portion of the subpacket.” Similarly, Ito does not teach, suggest or disclose “a power boost unit adapted to apply a power boost factor” to paging signal a, paging signal b, and paging signal c. Ito merely discloses that such signals are transmitted. There is no teaching, suggestion or disclosure of “a power boost unit adapted to apply a power boost factor to a portion of the subpackets.”

Further, Ito states:

[W]hen the number of transmissions has been set in a control signal, a comparison is made, for each paging signal transmitted the previous time, of the number of times said paging signal has been transmitted and the number of transmissions that have been set.

Ito, col. 5, lines 57-62.

Comparing the number of times the paging signal has been transmitted and the number of transmissions that have been set does not teach, suggest or disclose “a power boost unit adapted to apply a power boost factor to a portion of the subpackets.” In fact, the comparison is made so that “[w]hen the number of times a paging signal has been transmitted is equal to or greater than the number of transmissions that have been set, retransmission of that paging signal is stopped.” Ito, col. 5, lines 62-65.

In view of the foregoing, Applicants respectfully submit that claim 15 is patentably distinct from the cited references. Accordingly, Applicants respectfully request that the rejection of claim 15 be withdrawn.

Claim 16 recites “transmitting a second negative acknowledgement message for the last installment of the first subpacket, the second negative acknowledgement transmitted at a second time slot, where the second time slot is designated for the first subpacket of the next packet.” Markwalter, alone or in combination with Ito, does not teach, suggest or disclose this claim element.

Instead Markwalter states:

ARQ protocols use an acknowledgement mechanism between source and destination stations such that the source station can repeat a transmission if a positive acknowledgement (ACK) is not received from the destination station after the original transmission. Link-level ARQ protocols generally mandate a close timing relationship between the end of the original transmission and the start of the ACK so that the source station can repeat a packet immediately and minimize buffering requirements.

Markwalter, col. 1, lines 44-52.

The above passage of Markwalter teaches “repeat[ing] a transmission if a positive acknowledgement (ACK) is not received.” However, there is no teaching, suggestion or disclosure in this cited passage of Markwalter of “transmitting a second negative acknowledgement message for the last installment of the first subpacket.” The “transmission” taught in Markwalter does not teach, suggest or disclose the “installment of the first subpacket.” In fact, Markwalter does not teach that such transmissions are arranged in subpackets and transmitting “installments of the . . . subpacket.”

In addition, mandating a close timing relationship between the end of the original transmission and the start of the ACK does not teach, suggest or disclose “the second negative acknowledgement is transmitted at a second time slot, wherein the second time slot is designated for the first subpacket of the next packet.” The above passage of Markwalter does not teach, suggest or disclose the ACK being transmitted “at a second time slot, wherein the second time slot is designated for the first subpacket of the next packet.” Markwalter merely teaches that the ACK should have a close timing relationship between the end of the original transmission and the start of the ACK.

The addition of Ito does not overcome the deficiencies of Markwalter. In fact, the Office Action has not asserted, and the Applicants cannot find, where Ito teaches, suggests or discloses “the second negative acknowledgement is transmitted at a second time slot, wherein the second time slot is designated for the first subpacket of the next packet.”

In view of the foregoing, Applicants respectfully submit that claim 16 is patentably distinct from the cited references. Accordingly, Applicants respectfully request that the rejection of claim 16 be withdrawn.

Claim 17 depends directly claim 16. Accordingly, Applicants respectfully request that the rejection of claim 17 be withdrawn for the same reasons as those presented in connection

with claim 16 because Markwalter and Ito, alone or in combination, do not teach, suggest or disclose all of the claim elements of claim 16.

Claim 18 is rejected along the same rationale as claim 16. As such, Applicants respectfully submit that claim 18 is patentably distinct from the cited references. Accordingly, Applicants respectfully request that the rejection of claim 18 be withdrawn.

II. Claims 5-7 and 12-14 Objected

The Office Action objected to claims 5-7 and 12-14 as being dependent upon a rejected base claim. Claims 5 and 12 have been amended to correct a typographical error. No new matter has been added to claims 5 and 12. Applicants respectfully traverse this objection.

Claims 5-7 depend directly from claim 1. Accordingly, Applicants respectfully request that the rejection of claims 5-7 be withdrawn for the same reasons as those presented in connection with claim 1 because Markwalter and Ito, alone or in combination, do not teach, suggest or disclose all of the claim elements of claim 1.

Claims 12-14 depend directly from claim 8. Accordingly, Applicants respectfully request that the rejection of claims 12-14 be withdrawn for the same reasons as those presented in connection with claim 8 because Markwalter and Ito, alone or in combination, do not teach, suggest or disclose all of the claim elements of claim 8.

III. Conclusion

Applicants respectfully assert that all pending claims are patentably distinct from the cited references, and request that a timely Notice of Allowance be issued in this case. If there are any remaining issues preventing allowance of the pending claims that may be clarified by telephone, the Examiner is requested to call the undersigned.

REQUEST FOR ALLOWANCE

In view of the foregoing, Applicants submit that all pending claims in the application are patentable. Accordingly, reconsideration and allowance of this application are earnestly solicited. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

Respectfully submitted,

Dated: 04/02/2007

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